

CLAIMS:

1. A process for developing a dialog system, including generating a plurality of sample interactions representative of interactions between said dialog system and a user of said dialog system on the basis of definition data for said dialog system.
5
2. A process as claimed in claim 1, wherein said step of generating includes automatically generating a plurality of prompts on the basis of said definition data, providing said prompts to a user, and receiving responses to said prompts from said user.
10
3. A process as claimed in claim 1, wherein said step of generating includes automatically generating a plurality of prompts on the basis of said definition data, and automatically generating responses to said prompts on the basis of said definition data.
- 15 4. A process as claimed in claim 1, wherein said sample interactions include interaction text and application data.
5. A process as claimed in claim 3, wherein said step of generating a plurality of sample interactions includes generating first sample interactions, each of said first sample interactions including interaction text and one item of application data; and subsequently generating second sample interactions, each of said second sample interactions including interaction text and two or more items of application data.
20
6. A process as claimed in claim 3, wherein said step of generating a plurality of sample interactions includes generating a plurality of prompts and respective lists of possible responses to said prompts, and selecting responses from said lists.
25
7. A process as claimed in claim 6, wherein said step of selecting includes randomly selecting unselected responses from said lists.
30

- 30 -

8. A process as claimed in claim 6, including identifying a dialog state with at least one unselected response, and determining a sequence of events for entering said dialog state.
- 5 9. A process as claimed in claim 8, wherein said sequence of events is determined on the basis of sample interactions.
- 10 10. A process as claimed in claim 8, wherein said step of determining includes determining a first sequence of events for reaching an end dialog state and a second sequence of events for reaching said dialog state from an initial dialog state.
11. A process as claimed in claim 8, including determining two or more sequences of events for entering said dialog state and selecting from said two or more sequences to determine an event sequence with the least number of events.
- 15 12. A process as claimed in claim 8, wherein said step of determining a sequence of events for entering said dialog state includes providing one or more prompts to a user and receiving one or more responses from said user.
- 20 13. A process as claimed in claim 8, including generating events on the basis of said sequence to enter said dialog state.
- 25 14. A process as claimed in claim 3, wherein said step of automatically generating a plurality of prompts includes selecting grammar rules of said definition data to generate prompts that are likely to have responses having the largest numbers of items of information.
15. A process as claimed in claim 1, including modifying said sample interactions on the basis of interaction data received from a developer.

- 31 -

16. A process as claimed in claim 15, wherein said definition data includes prompt data, and the process includes modifying said prompt data on the basis of said interaction data.
- 5 17. A process as claimed in claim 16, wherein said prompt data is in a grammar format.
18. A process as claimed in claim 1, including using grammar learning to update prompt data of said definition data on the basis of said sample interactions.
- 10 19. A process as claimed in claim 18, including updating prompts of said sample interactions on the basis of the updated prompt data.
20. A process as claimed in claim 19, including selecting prompts of said sample interactions for updating if said prompts have not been modified by a developer.
- 15 21. A process as claimed in claim 1, including generating said definition data on the basis of specification data received from a developer.
22. A process as claimed in claim 21, wherein said definition data is generated on the basis of said specification data and one of a predetermined dialog application and at least one dialog application template.
- 20 23. A process as claimed in claim 1, wherein said definition data includes dialog state machine code, at least one recognition grammar and prompt data.
- 25 24. A process as claimed in claim 23, wherein said prompt data includes at least one prompt grammar.
25. A development system having components for executing the steps of any one of claims 1 to 24.
- 30

- 32 -

26. A computer readable storage medium having stored thereon program code for executing the steps of any one of claims 1 to 24.
27. A dialog application generated by executing the steps of any one of claims 1 to 24.
- 5 28. A development system, including a scenario generator for generating a plurality of sample interactions representative of interactions between a dialog system and a user of said dialog system on the basis of definition data for said dialog system.
- 10 29. A development system as claimed in claim 28, wherein said definition data includes state machine code, prompt data, and recognition data.
30. A development system as claimed in claim 29, including a simulator for generating prompts of said sample interactions on the basis of said prompt data, and wherein said
15 scenario generator is adapted to generate responses to said prompts on the basis of said recognition data.
31. A development system as claimed in claim 29, including a scenario editor for modifying said sample interactions.
- 20 32. A development system as claimed in claim 31, wherein said scenario generator generates graphical user interface components for modifying said sample interactions.
33. A development system as claimed in claim 31, including at least one learning
25 component for updating at least one of said prompt data and said recognition data on the basis of the modified sample interactions.
34. A development system as claimed in claim 28, including an application builder for generating said definition data on the basis of at least one of specification data
30 provided by a developer, an application template, and an existing application.

- 33 -

35. A dialog application generated by a development system as claimed in any one of claims 28 to 34.
36. A graphical user interface for use in developing a dialog system, said interface
5 including graphical user interface components for modifying sample interactions representative of interactions between said dialog system and a user of said dialog system.
37. A graphical user interface as claimed in claim 36, wherein said graphical user interface
10 components include a component for deleting a selected sample interaction.
38. A graphical user interface as claimed in claim 37, wherein said graphical user interface components include a component for a developer to select a predetermined reason why said selected sample interaction was deleted.
15
39. A graphical user interface as claimed in claim 36, wherein said graphical user interface components include a component for defining a question and an answer to said question for display to a user of said dialog system.
- 20 40. A graphical user interface as claimed in claim 39, wherein said graphical user interface components include a question text component for defining question text and an answer text component for defining answer text.
41. A graphical user interface as claimed in claim 39, wherein said graphical user interface
25 components include a component for selecting from a list of predetermined answers to said question.
42. A graphical user interface as claimed in claim 39, wherein said graphical user interface components include a component for specifying whether said question can be asked at
30 any time.

- 34 -

43. A graphical user interface as claimed in claim 39, wherein said graphical user interface components include a component for specifying that said question can be asked during a selected sample interaction.